**Learning Activity 3: Kahn Academy**

**EDT 514: Application of Instructional Design**

**Description:**

I will be using the program Success Maker and the [Kahn Academy](http://www.khanacademy.org/) website (kahnacademy.org) throughout the whole unit on 2-step equations in my middle school intervention math class. Success Maker is a program that tests each student to see where they have gaps in their learning and then provides lessons and activities to fill in those gaps. Success Maker also produces activities that the teacher can do with the whole class on the interactive whiteboard. The Kahn Academy is a website that has tutorial videos on several different topics in math and any other subject. I will be using Kahn academy to review 1-step equations at the beginning of the unit. For this lesson I will be having my students watch the 13 min video on [solving 2-step equations](http://www.khanacademy.org/math/algebra/solving-linear-equations-and-inequalities/v/two-step-equations). This video is a little longer than I would usually lecture (stand at the board) for my students, however the video goes through solving several different problems. I may or may not show all of the examples depending on if my students are losing interest or not. I usually show a Kahn Academy video in the middle of a unit because I think students like to hear someone else talk for a while. Also, sometimes the videos explain the process a little different than I do. I think it’s good for my student to hear the process a little differently, maybe what the video says makes more sense to them than what I am saying.

I will start my lesson by briefly reviewing 1-step equations. The previous unit was on solving 1-step equations, therefore I will know how well my students understand how to solve 1-step equations. I will then open a [Success Maker activity](http://successmaker.airport.k12.mi.us/content/MATH/sco_preview.html?SCO_ID=.lo/SMMA_LO_01288.xml&template=null&launch_data=null) that helps students see that when solving equations we are actually working backwards. We have the answer, but now we want to know what we started with. I will randomly have students come up to the white board and complete the problems.

I will then give my students a brief description of what a 2-step equation is. I will explain how 2-step equations are similar to 1-step equations. Next, I will have my students watch the Kahn Academy clip titled [Two Step Equations](http://www.khanacademy.org/math/algebra/ck12-algebra-1/v/two-step-equations). Like I said, I will monitor how engaged my students are throughout the video because it is a little longer. I may stop the video short if my students are losing interest. Once the video is finished, I will go back to certain parts and explain them more clearly.

After the video and any explanations I make, I will have my students practice solving 2-step equations. I will have a worksheet that consists of roughly 10 2-step equations that they will need to solve. If they do not finish the problems they will take them home for homework. I will use the practice problems to assess how well they understand 2-step equations. If I notice they don’t understand the process of solving 2-step equations or need more practice I will have more activities for them to do the following day or I will have them practice more.

**Unit Standards:**

**GLCE:**

A.FO.A06.11 Relate simple linear equations with integer coefficients, e.g., 3x = 8 or x + 5 = 10, to particular contexts and solve.\*

A.FO.06.12 Understand that adding or subtracting the same number to both sides of an equation creates a new equation that has the same solution.

A.FO.06.13 Understand that multiplying or dividing both sides of an equation by the same non-zero number creates a new equation that has the same solutions.

A.FO.06.14 Solve equations of the form ax + b = c, e.g., 3x + 8 = 15 by hand for positive integer coefficients less than 20, use calculators otherwise, and interpret the results.

**NETS-T:**

1a. Promote, support, and model creative and innovative thinking and inventiveness

2a. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity

2b. Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress.

**Content Knowledge:**

For this lesson I need to know how to solve 1-step and 2-step equations. I need to fully understand how to do this before I can teach this to my students. Because of my degree, I know how to solve 1-step and 2-step equations.

Most of the students I have are several years behind in math. I take the lessons the teachers are using and I break everything down a little bit further for my students. I also have a special education degree that helps me break things down so my students understand what their math teachers are teaching them.

**Pedagogical Knowledge:**

Throughout this lesson I will be using whole group instruction and having students work by themselves. I only work with 6 students for math intervention at a time so I am also able to use a lot of one-on-one instruction with students if they need additional assistance.

When I have students go to the whiteboard to complete problems we work out the problems as a whole class. Most of the time, my students have very low self-esteem in math. They don’t have any confidence in their abilities. Therefore, when they go up to the whiteboard we work together as a class to solve the problem. The student at the board is the one using the stylus to input our answers. This helps build confidence when they are in front of a whole group.

**Technology Knowledge:**

I will be using video clips and interactive whiteboard activities. The video gives another perspective on how to solve 2-step equations. Sometimes students like that it’s someone different showing them how to do something.

To get access to the Success Maker activities you have to have an account in Success Maker, which also means you have to pay for the program. We only have 12 licenses for our whole middle school. However, I am able to copy the links to the activities. If a teacher comes to me because they are looking for a way to break something down even further or for another activity, I usually find them an activity on Success Maker to use with the whole class. A teacher could also sign out the computer lab and have each student go to the link and complete the activity individually, if they wish.